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with a great racket they all rose together like a flock of blackbirds and returned to their haunts among the cedars far up the cañon. For some time a pair of mallard ducks had been circling about as though looking for a place to alight, and finally they selected a bend in the creek just in front of me. Above the ridge beyond the creek, a turkey buzzard was floating listlessly in the morning sun, apparently without the least exertion on his part. I watched him carefully for several moments as he circled about, but could not detect the slightest motion in his wings.

One other bird I saw here to which is attached a good deal of interest, the white-necked crow (*Corvus cryptoleucus*). I have found these birds common along the base of the Rocky Mountains, from Cheyenne at the north, to Trinidad at the south; and from the Snowy Range, to a point thirty miles out on the plain, yet Mr. Ridgway writes me that these birds "are entirely out of their previously known range." I strongly suspect that this bird has been mistaken by naturalists, who have ornithologized in this section, for the common American raven (*Corvus carnivorus*), since it seems to me impossible that any one should remain here any length of time without seeing it; still the Western bluebird (*Sialia Mexicana*), and several other birds which are equally abundant here, are in the same predicament. The raven is said to be common in Colorado, but during a year spent in collecting in different parts of the territory, I have seen but a single pair!

HARVEST MITES.

BY PROF. C. V. RILEY.

In the "American Entomologist" (vol. 1, no. 5) an account was given of the eight true insects, and of some other ringed animals or articulates, known to be parasitic on man. The insects are, the head-louse (*Pediculus humanus* Linn.), the body-louse (*Pediculus cervicalis* Linn.), the crab-louse (*Pediculus pubis* Linn.), the human bot-fly (*Œstrus hominis* Gmelin), the common flea (*Pulex irritans* Linn.), the chigoe (*Pulex penetrans* Linn.), the common bed-bug (*Acanthia lectularia* Linn.) and the big bed-bug (*Conorhinus sanguisuga* Le C.).

The only mite that is known to attack man, and whose appearance is at all familiar, is the itch mite (*Acarus scabiei* Linn.). We have, however, in the southwestern States, two other mites which cause great annoyance from harvest time till into October, to people who frequent the rank herbage and grass in our forest openings or along our rivers. Both of them are six-legged, reddish, microscopic specks, and both are popularly termed jiggers; but as this term is universally applied to the more dangerous *Pulex penetrans* (a true flea occurring in Central America but not in the United States), and as a European mite (*Leptus autumnalis*), having similar habits to ours, is there popularly called "harvest bug," we may apply to our species the term "harvest mites."

Before we can talk intelligently and definitely of anything that moves or has a being upon our earth, it must receive some scientific appellation. According to my friend, A. S. Packard, Jr., and from our present knowledge of the transformation of mites, we may very plausibly conclude that these six-legged forms are but the young of some eight-legged form such as Trombidium, to which belongs our common "red spider." Now it is contrary to all scientific usage to name and describe a species from its immature characters; but the older authors not only described these six-legged mites as perfect animals, but referred the different forms to different genera. Therefore, as it is important that such common and annoying pests should have a "local habitation and a name," and as they are so far only known in the six-legged state, I shall provisionally, and for the sake of convenience, name them. Should any future arachnologist learn the true life history of either, he may, of course, recognize or reject these names as he sees fit.

*The American Harvest mite** (*Leptus Americanus? n. sp.* Fig. 5 *a*). — This species is barely visible with the naked eye, moves readily and is found more frequently upon children than upon adults. It lives mostly on the scalp and under the arm-pits, but is sometimes found on the other parts of the body. It does not bury itself in the flesh, but simply insinuates the anterior part of its body just under the skin, thereby causing intense irritation, followed by a little red pimple. As with our common ticks, the irritation lasts only while the animal is securing itself, and its presence would afterwards scarcely be noticed but for the pimple which results.

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*Color brick-red, slender, ovate, the narrow, anterior end bifid, and furnished with stiff, converging setæ. Six-legged; legs long, the front pair blunt and slightly thickened at tip where they are incurved and thickly armed with stiff hairs; the others rather longer, and terminating in a stiff, curved, furcate claw. Average length ·008 inch.

*The Irritating Harvest mite** (*Leptus irritans*, *n. sp.* Fig. 5 *b*). This is the more troublesome and, perhaps, better known of the two, causing intense irritation and swelling on all parts of the body, but more especially on the legs and around the ankles. Woe betide the person who, after bathing in the Mississippi anywhere in this latitude, is lured to some green dressing-spot of weeds or grass! He may, for the time, consider himself fortunate in getting rid of mud and dirt, but he will afterwards find to his sorrow that he got hold of something far more tenacious, in these microscopic harvest mites. If he has obtained a good supply of them, he will, in a few hours, begin to suffer from severe itching, and for the next two or three days he will be likely to scratch until his limbs are sore.

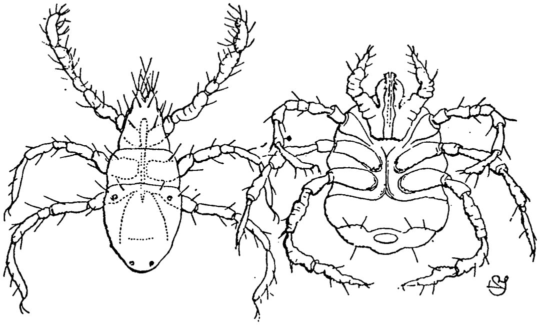

Fig. 5 *a*. Fig. 5 *b*.

Harvest Mites.

With the strong mandibles, and the elbowed maxillæ, which act like arms, this mite is able to bury itself completely in the flesh, thereby causing a red swelling with a pale pustulous centre containing watery matter. If, in scratching, the person affected is fortunate enough to remove the mite before it enters, the part soon heals. But otherwise the irritation lasts for two, three or four days, the pustulous centre reappearing as often as it is broken.

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*Color brick, or blood-red; of tick-like form, being nearly as broad in front as behind; six-legged, the legs terminating in two stiff hairs; a strong pair of elbowed maxillæ, recalling a fourth pair of legs, and similarly terminating in two hairs; mandibles more or less distinctly tridentate at end inside. Length .01 inch.

The animal itself, on account of its minute size, is seldom seen; and the uninitiated, when first troubled with it, are often alarmed at the symptoms and at a loss to account for them. Fortunately, these little plagues never attach to persons in such immense numbers as do sometimes young or so-called "seed" ticks; but I have known cases where, with irritation and consequent scratching, the flesh had the appearance of being covered with ulcers; and in some localities, where these pests most abound, sulphur is often sprinkled, during "jigger" season, in foot-gear as a protection.

Sulphur-ointment is the best remedy against the effects of either of these mites, though when that cannot be obtained, saleratus water, and salt water will partially allay the irritation.

The normal food of either must, apparently, consist of the juices of plants, and the love of blood proves ruinous to those individuals who get a chance to indulge it. For unlike the true chigoe the female of which deposits eggs in the wound she makes, these harvest bugs have no object of the kind, and, when not killed at the hands of those they torment, they soon die — victims to their sanguinary appetite.

ON THE GENETIC RELATIONS OF THE CETACEANS AND THE METHODS INVOLVED IN DISCOVERY.

BY THEODORE GILL, M.D., PH.D.

IN a "Synopsis of the Primary Subdivisions of the Cetaceans," published in 1871,* I ventured some remarks on the apparent genetic relations of the Cetaceans, and observed that "between the Carnivores and the Cetaceans of the present age, the gap does indeed appear to be very great, but it is bridged over, to a very considerable extent, by the Zeuglodonts of the Tertiary epoch, ... and from the Zeuglodont stem have probably descended, in different directions, the toothed and whalebone whales; while the former, in some features, such as the general form of the skull, the teeth, etc., appear to deviate less from ordinary mammals; the latter, in other respects, but especially in the development of

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*Proceedings and Communications Essex Inst., vol. vi, pp. 121-126.